THE EFFECT OF OLIVE OIL APPLICATION ON KNEE PAIN AMONG PATIENTS WITH OSTEOARTHRITIS IN SELECTED HOSPITAL AT NAGERCOIL

Dissertation submitted to

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY
CHENNAI

IN PARTIAL FULFILMENT OF REQUIREMENT
FOR THE AWARD OF DEGREE OF

MASTER OF SCIENCE IN NURSING

APRIL 2014

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Certified that this is the bonafide work of

Reg. No: 301211704

MEDICAL SURGICAL NURSING

THANTHAI ROEVER COLLEGE OF NURSING,

PERAMBALUR- 621 212.

COLLEGE SEAL :

SIGNATURE : _____

Prof.R.PUNITHAVATHI M.Sc. (N)
Principal,
Thanthai Roever College of Nursing,
Perambalur, Tamil Nadu- 621 212.

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Approved by the Dissertation Committee On : _____

Research Guide : _____

Prof. R.PUNITHAVATHI M.Sc. (N)
Principal,
Thanthai Roever College of Nursing,
Perambalur, Tamil Nadu- 621 212.

Clinical Specialty Guide : _____

Prof. V.J ELIZABETH M.Sc. (N)
Vice-principal,
Thanthai Roever College of Nursing,
Perambalur,Tamil Nadu -621212.

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_____ _____

INTERNAL EXAMINER **EXTERNAL EXAMINER**

DECLARATION

I **301211704** hereby declare that this dissertation entitled **"THE EFFECT OF OLIVE OIL APPLICATION ON KNEE PAIN AMONG PATIENTS WITH OSTEOARTHRITIS IN SELECTED HOSPITAL AT NAGERCOIL**" has been prepared by me under the guidance and direct supervision of **Prof. V.J.ELIZABETH, M.Sc. (N).,** Professor cum Principal, Thanthai Roever College Of Nursing, Perambalur, as a requirement for partial fulfilment of **M.Sc Nursing** degree course under **The Tamil Nadu Dr. M.G.R. Medical University, Chennai – 32.** This dissertation had not been previously formed and this will not be used in future for award of any other degree/ diploma. This dissertation represents independent original work on the part of the candidate.

Place: Perambalur
Date: April 2014

301211704
II Year M.Sc. [N] Student,
Thanthai Roever College of Nursing,
Perambalur.

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THE EFFECT OF OLIVE OIL APPLICATION ON KNEE PAIN AMONG PATIENTS WITH OSTEOARTHRITIS IN SELECTED HOSPITAL AT NAGERCOIL

ABSTRACT

Introduction: Almost all the people develop osteoarthritis, just as a natural consequence of aging. All patients with osteoarthritis will experience some form of pain which can negatively affect their daily lives.

Objective: The main objective of the study was to assess the effectiveness of olive oil application on knee pain among patients with osteoarthritis.

Method: The approach selected for this study was evaluative in nature and the research design was true experimental design to be precise pre-test-post test control group design. Data collection was done by screening the patients with osteoarthritis; individuals who had osteoarthritis were drawn from the screened population. 30 subjects for experimental group and 30 subjects for control group were selected by simple random sampling technique. The tool adopted and used for the data collection was descriptive pain scale. Interview method was used to collect the data.

Result: In experimental group post-test mean pain score was 1.40 with standard deviation of 0.49and the control group post-test mean pain score was 3.03with standard deviation of 0.61. And the calculated' value was 11.303 which showed that there was a significant difference between the experimental and control group post-test level of pain among patients with osteoarthritis at $p<0.001$ level of significance.

Conclusion: The outcome of the study showed that olive oil application was effective in reducing the level of pain among patients with osteoarthritis.

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CHAPTER I

INTRODUCTION

“The aim of the wise is not to secure pleasure, but to avoid pain. ”

-Aristotle

Musculoskeletal problems become a major health problem. This problem has been recognized by United Nation and World Health Organization in the bone and joint decade 2000-2010. The bone and joint decade report describes that osteoarthritis which is characterized by loss of joint cartilage that leads to pain and dysfunction, osteoarthritis decrease the life expectancy of aged people.

Osteoarthritis claims the No.1 spot among ailments in India and it is the fourth leading cause of disability. The worldwide prevalence estimate for symptomatic osteoarthritis is 9.6% among men and 18% among women. It accounts for the decrease in activities of daily living in elderly dependent population in the community.

Osteoarthritis is a nearly universal, slowly progressive degenerative condition affecting men and women as they age. Inside a joint, a tissue called cartilage cushion that prevents the bones from rubbing against each other. Osteoarthritis occurs when the cartilage of a joint erodes. Bones begin to rub against each other, causing pain and difficulty moving the joint, muscle weakness, limited range of motion, joint deformities, disturbance in gate and sleep. Osteoarthritis is expected to be one of leading cause for disability by the year 2020.

Worldwide osteoarthritis is the most common articular disease of people 65 years and older. The prevalence of this disorder in certain elderly group is high as 85%. There is a rise in the annual consultation rate of osteoarthritis. Obviously, much more effort is required in the field of rheumatology especially for prevention and treatment of osteoarthritis.

Olive oil is extracted from the ripened fruit, it is otherwise known as liquid gold. Olive oil is one of the most healing substances that can apply on body especially on osteoarthritis pain and it consists of a powerful inflammation-fighting compound. Olive oil application is one of traditional methods of pain reduction in patients with osteoarthritis.

BACKGROUND OF THE STUDY

India is likely to notice an endemic osteoarthritis with 80% of the above 65 years population suffering with wear and tear of joints. 40% of these people are likely to suffer from severe osteoarthritis, which will disable from daily activities (WHO 2013 Hetal Vyas. Oct. 13. 2012).

It is found that while there is high incidence of osteoarthritis, awareness about the disease is very low compared to awareness about other diseases (Arogya TNS).

Osteoarthritis is a major source of disability in developed countries. As populations age, we can expect knee osteoarthritis to become a serious public health problem. Preventive strategies to minimise the risk of both the development and progression of knee osteoarthritis are therefore of paramount importance not only with respect to quality of life issues but the burdening costs of managing and treating this common disorder in the next few decades. Osteoarthritis will become a leading cause for disability, there

must steps taken for prevent, and treatment of osteoarthritis and deformity due to osteoarthritis.

Indisputably the risk factors in high risk population include female gender, old age, and overweight, history of previous injuries or surgeries on the knee. Among females, the prevalence of osteoarthritis is said to increase during menopausal age. Many studies have shown that loss of estrogen at the time of menopause increases the women's risk of getting osteoarthritis.

About 80% of the elderly people are having osteoarthritis the patient may experience severe pain during mobility due to that the patient are not able to do activities properly. Olive oil has significant effects on osteoarthritis pain.

NEED FOR THE STUDY

Pain is the more terrible lord of mankind than even death itself today. Pain has become the universal disorder, a serious and costly public health issue, and a challenge for the family friends, and health care providers who must give support to the individual suffering from physical as well as the emotional consequences of pain. When knee is the most complex and nerve rich joint over use, the knee will react sharply causing discomfort and pain. Nurses are primarily responsible for providing pain relief in the patients with osteoarthritis.

Osteoarthritis is often progressive despite treatments such as: pain medication, exercises, hot application, cold application, corticosteroid injection before eventually requiring joint replacement. The use of topical substances for the relief of symptoms in osteoarthritis has been addressed in few studies. Gemmel et.al., reported use of herbal creams for improvement of pain and stiffness. Field et.al, reported on effectiveness of massage to reduce

pain in osteoarthritis, Vanhaslen et al reported massage oil reduces pain in osteoarthritis pain.

Olive oil has claimed to have beneficial effects on osteoarthritis in particular on joint pain, stiffness. Olive oil is liquid sold when it come to fighting pain, their elixir is rich in anti oxidant poly phenols that help inhibit a common pain causing mechanism in the body.

Olive oil contains a compound called Oleocanthal that acts in the same way ibuprofen does to relieve pain. Olive oil contains numerous phenolic compounds that exert potent anti- inflammatory action. (Lucas. L, Russell.). Olive oil increases blood flow to particular area. Olive oil improving the tone of supportive muscles, enhancing joint flexibility and relieving pain. In a study it was stated application of 3ml of olive oil relive daily relives osteoarthritis pain.

Scientists at the Monell Chemical Census Centre in Philadelphia reported in the August 31, 2005 issues on the Journal Nature that oleocanthal acts as a natural anti- inflammatory by inhibiting COX-2 enzymes in the same way ibuprofen does.COX-2 enzymes take a part in the process of joint inflammation that can lead to arthritis pain.

Researches shows olive oil application reduces inflammation and increases blood flow to the joint, thus improves tone of supportive muscles, enhances joint flexibility and relieves pain. This study aims to evaluate the claimed therapeutic effect of olive oil application in pain reduction among patients with osteoarthritis. When it is proven to be effective olive oil could be used as an alternative therapy for patients with osteoarthritis, which is easy to apply and readily available.

STATEMENT OF THE PROBLEM

An experimental study to assess the effectiveness of olive oil application on knee pain among patients with osteoarthritis in selected hospital at Nagercoil.

OBJECTIVES

1. To assess the level of knee pain among patients with osteoarthritis.
2. To assess the effectiveness of olive oil application on knee pain among patients with osteoarthritis.
3. To find out the association of post-test level of pain among patients with osteoarthritis with their selected demographic variables in the experimental group.

HYPOTHESES

H_1 There will be a significant reduction in knee pain among patients with osteoarthritis after olive oil application.

H_2 There will be significant association between post-test level of knee pain and selected demographic variables of patients with osteoarthritis who received olive oil application in experimental group.

OPERATIONAL DEFINITIONS

Effectiveness

It is an outcome of significant reduction in pain level after application of olive oil. It measured with descriptive pain scale.

Olive Oil Application

Olive oil application is the application of extract produced from olive seeds, 10ml of it applied for 10 minutes once a day for 14 days on affected knee.

Pain

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. In this study it refers to the unpleasant sensory feeling perceived by the patients in the knee joint due to osteoarthritis, measured with descriptive pain scale.

Osteoarthritis

Osteoarthritis is degeneration of joints cartilage and underlying bone causes pain and joint stiffness.

ASSUMPTIONS

- Patients with osteoarthritis will have pain in the joints.
- Olive oil application will reduce inflammation and increase blood flow.
- Olive oil improves the tone of supportive muscles, enhances joint flexibility and relieves pain.

DELIMITATIONS

- The study is limited to only pain due to osteoarthritis.
- Size of the sample is only 60.

- ❖ Patients who are willing to participate.
- ❖ Study is only for 4weeks.

PROJECTED OUTCOME

The findings of this study will reveal the effectiveness of olive oil application in reducing pain among patients with osteoarthritis, If found to be effective, this intervention could be incorporated as one of the nursing measures to reduce pain among patients with osteoarthritis.

CHAPTER II

REVIEW OF LITERATURE

Review of literature is the crucial element of research process related to aim to review the critical points of knowledge including substance finding as well as theoretical and methodological contribution on particular topic.

This chapter consists of review of literature fewer than four headings.

1) **Review related to incidence and risk factors of osteoarthritis**
2) **Review related to knee pain associated with osteoarthritis**
3) **Review related to treatments of osteoarthritis**
4) **Review related to olive oil application for osteoarthritis**

1) REVIEW RELATED TO INCIDENCE AND RISK FACTORS OF OSTEOARTHRITS

Richmond et al., (2013) conducted a study to identify risk factors for osteoarthritis. The study selected to meet the following criteria: (1) original data (2) joint injury, sport activity, physical activity, overweight/obesity, and/or occupational activity investigated as risk factors (3) outcomes included osteoarthritis and (4) analytic component of study design. The result showed that joint injury, obesity, and occupational activity are associated with an increased risk of knee and hip osteoarthritis.

Tveit M et al., (2012) done a cohort study aimed to evaluate the risk of a hip or knee arthroplasty due to osteoarthritis in former athletes. The prevalence of osteoarthritis and arthroplasty in the hip and knee were registered in 709 former male elite athletes with a median age of 70 years, retired from sports for a median 35 years, and compared with 1368 matched controls. Result showed that, the risk of hip or knee osteoarthritis was higher in former athletes than in control group.

M. Blagojevic et al., (2010) conducted a study to determine the risk factors for onset of knee osteoarthritis and its prevention. A systematic literature search was carried out for cohort and case–control studies evaluating the association of demographic, co morbid, and other patient determined factors with onset of knee osteoarthritis. The study concluded that certain factors have been extensively reviewed more longitudinal studies are needed to investigate the association of occupational and other patient-determined factors with future knee osteoarthritis.

Krajnc Z et al., (2010) conducted a study to evaluate differences in knee injuries and osteoarthritis between the dominant and non-dominant legs of former football players. Bilateral standing knee radiographs were taken. The evidence of osteoarthritis was found in 17 (43%) dominant and 23 (58%) non-dominant knees. Football players have a significant risk of knee osteoarthritis with preponderance in the non-dominant leg.

Alouch et al., (2009) conducted a met analysis and published regarding work related risk factors for osteoarthritis. The review finding stated that there strong relationship between physical strain experienced while performing jobs and the incidence of osteoarthritis. The study reported that main factor associated knee osteoarthritis were obesity previous knee trauma, female gender and old age.

Blagojevie (2009) conducted a Meta analysis to determine the risk factors of knee osteoarthritis. The study reported the main factors associated knee osteoarthritis were obesity previous knee trauma, female gender and old age.

Guh et al., (2009) conducted a study to estimate the incidence of each co-morbidity related to obesity and overweight using a meta-analysis. The result showed that both overweight and obesity were associated with the incidence of multiple co-morbidities including osteoarthritis, type II diabetes, cancer and cardiovascular diseases.

Kalichman (2009) reviewed that prevalence of osteoarthritis more frequently in women over fifty years of age, osteoarthritis has a strong genetic predisposing; apparently gender and heavy labor has been linked to osteoarthritis. Other values such as weight, smoking, joint hyper elasticity, age of menarche play role.

2) REVIEW RELATED TO KNEE PAIN ASSOCIATED WITH OSTEOARTHRITIS

Christine Cedraschi et al., (2013) conducted a Qualitative Analysis of the Perceptions of People Suffering from osteoarthritis. Two focus groups were conducted with a sample of 14 participants, with either recent or chronic osteoarthritis, at one or multiple sites. Focus groups were semi-structured and used open-ended questions addressing personal experiences to explore the experiences of patients with osteoarthritis pain and the meanings they attributed to this pain. The study identified the pain descriptors and defined seven dimensions of osteoarthritis pain.

Orita.s.koshi et al., (2011) did a co-relational study to examine the association between pro inflammatory cytokines, radiographic grading and scoring among patients with osteoarthritis. Synovial fluid was harvested from

the knees of 47 consecutive osteoarthritis patients. The result suggested that these cytokines play a role in the pathogenesis of synovitis in osteoarthritic knees in different ways.

Snijders et al., (2011) conducted a cohort study to measure the level of difference dimension of fatigue before and after therapy and investigate the association between fatigue, pain and physical mobility in patient with knee osteoarthritis.

Zifchockr et al., (2011) conducted a study to assess the severity of knee osteoarthritis by examining relationship between joint structures, function, and pain. Osteoarthritis was assessed by using visual analogue scale. The study concluded that it may be critical in achieving effective pain relief in patient with osteoarthritis.

3) REVIEW RELATED TO TREATMENT OF OSTEOARTHRITS

J.H. Abbott et al., (2013) conducted a study to evaluate the clinical effectiveness of manual physiotherapy and exercise physiotherapy in addition to usual care for patients with osteoarthritis of the knee. Design In this 2 × 2 factorial randomized controlled trial, 206 adults who met the criteria were randomly allocated to receive manual physiotherapy (n = 54), multi-modal exercise physiotherapy (n = 51), combined exercise and manual physiotherapy (n = 50), or no trial physiotherapy (n = 51). The primary outcome was change in the Western Ontario and McMaster osteoarthritis index after 1 year. The study concluded that Manual physiotherapy provided benefits over usual cares that were sustained to 1 year.

M.S. Corbett et al., (2013) conducted a study to compare the effectiveness of acupuncture with other relevant physical treatments for

alleviating pain due to knee osteoarthritis. End of treatment results showed that eight interventions: interferential therapy, acupuncture, TENS, pulsed electrical stimulation, balneotherapy, aerobic exercise, sham acupuncture, and muscle-strengthening exercise produced a statistically significant reduction in pain when compared with standard care.

Divyasanghi et al., (2013) conducted a study to assess the effectiveness of vitamin-D to treat knee osteoarthritis. A randomised controlled study was conducted, selected 107 patients with osteoarthritis with vitamin-D insufficiency (<50 nmol) to receive oral vitamin-D. Patients followed for 1 year knee pain had decreased in vitamin-D group by mean -0.26 likewise knee function also improved in the group by mean-1.36.

Kings bury et al., (2013) conducted a study to describe comprehensively the cross-sectional and longitudinal patterns of analgesic and nutraceutical medication use for knee osteoarthritis in a cohort and to investigate associated demographic and clinical factors. Participants had symptomatic radiographic knee osteoarthritis. Multiple binary logistic regression models identified characteristics independently associated with the use of analgesics or nutraceuticals. The study concluded most people with knee osteoarthritis used pharmacological therapies frequently.

Nidhi Sofat et al., (2013) conducted a study to assess the effectiveness of a variety of bisphosphonates in patients suffering from osteoarthritis. Of 3832 patients studied, in most cases these drugs showed limited pain relief. However, a few studies did show benefit; the bisphosphonate alendronate was found to be more effective for patients with osteoarthritis than existing pain relieving drugs.

E.M. Roos et al., (2012) conducted a study to assess the recent scientific advances in the treatment of osteoarthritis relating to education,

exercise, weight control and passive non-pharmacological and non-surgical treatments such as manual therapy. The study concluded the current research focus on non-pharmacological and non-surgical treatments for osteoarthritis. Education, exercise and weight loss are effective in the long term and supported as cost-effective first-line treatments.

Helen et al., (2011) conducted a study to assess the effect of two different massage oils on pain and stiffness associated with joint arthritis. All participants used each oil for a four weeks period. The participants were randomly assigned with respect to the order of oil use. There was a two week period of no intervention between uses of each oil. Joint pain, stiffness and function scores from questionnaire ratings were compared. The result suggested that there was an overall decrease in pain and in joint stiffness across the group.

Jun Iwamoto et al., (2011) conducted a study discuss the effectiveness of exercise for osteoarthritis of the knee based on a review of the literature. The study concluded that Muscle strengthening and aerobic exercises are effective in reducing pain and improving physical function in patients with mild to moderate osteoarthritis of the knee.

W. Zhang et al., (2010) conducted a study to update evidence for available therapies in the treatment of hip and knee osteoarthritis. Methods a systematic literature search was undertaken using MEDLINE, EMBASE, CINAHL, AMED, Science Citation Index and Library. Result showed that 64 systematic reviews, 266 randomized controlled trials and 21 new economic evaluations were published between 2006 and 2009. Among non-pharmacological therapies, effective for pain relief was for self-management, education, exercise and acupuncture. Among pharmacological therapies, evidence for the benefits of oral and topical non-steroidal anti-inflammatory drugs, intra-articular corticosteroid was not greatly changed.

4) REVIEW RELATED TO OLIVE OIL APPLICATION FOR OSTEOARTHRITIS

AlMalty Abdul-Majeed et al., (2013) conducted a study to compare the effect of topical application of olive oil and non-steroidal anti-inflammatory drugs on the knee pain among patients with osteoarthritis. A convenient sample of thirty patients with knee osteoarthritis was randomly assigned to three groups. Group A received topical olive oil (3ml) and group B received topical ketoprofen gel (3cm2) three times a day followed by therapeutic exercise. Group C received therapeutic exercise only three times a day. Result showed, topical application of olive oil was effective in alleviating the symptoms of patients with knee osteoarthritis compared to topical application of NSAID and therapeutic exercise.

Gerald Quigley (2013) conducted a study compared the effectiveness of externally applied olive oil in osteoarthritis, to the commonly available gel containing Piroxicam. The study included women aged between 40 and 85 years with osteoarthritis of the knee. The study stated that the drug based gel, which has been available in Australia, was not as effective as applying olive oil to the osteoarthritis knees. There's a number of anti-inflammatory substances contained in olive oil, and the benefits can't be attributed to just a single ingredient.

Bohloolis (2012) conducted a study in the rheumatology clinic of Imam Hospital, Ardabil University of Medical Sciences, Iran. A traditional method of managing knee pain in Iran, the authors conducted a pilot, prospective, comparative, randomized, double-blinded trial of topical olive oil therapy versus the NSAID piroxicam gel in the treatment of knee osteoarthritis. The findings of this study suggest that treatment for knee osteoarthritis with topical olive oil is associated with greater improvement in all outcome measures compared to treatment with piroxicam gel.

PART II

CONCEPTUAL FRAMEWORK

The conceptual framework and model adopted for the present study was based on **Roy's adaptation model (1984)**. Roy's model focuses on the concept of adaptation of the person. Her concepts of nursing, person, health, and the environment are all interrelated to this central concept. The person continually experiences environmental stimuli. Ultimately, a response is made and adaptation occurs. That response may be either an adaptive or an ineffective response. Adaptive response promotes integrity and helps the person to achieve the goal of adaptation; that is, they achieve survival, growth, reproduction, mastery, person and environmental transformation. Ineffective response fails to achieve or threaten the goals of adaptation.

Nursing has a unique goal to assist the person's adaptation effort by managing the environment. The result is attainment of an optimal level of wellness by a person.

SYSTEM

The system is the patients with osteoarthritis and the environment is the home and working place. Both will have a constant interaction with each other.

INPUT

The adaptive system has inputs as behavioral responses that serve as feedback and control process known as coping mechanism.

FOCAL STIMULI

The demographic variables like age, sex (Internal factors), type of work, family income, duration of illness and Body mass index (External factors) precipitates the level of osteoarthritis pain and which is reflected either as adaptive or maladaptive response. The level of pain differs due to these internal and external factors.

CONTEXTUAL STIMULI

The contextual stimuli include lack of information about osteoarthritis and its management.

RESIDUAL STIMULI

The residual stimuli include the beliefs, attitudes related to osteoarthritis pain.

COPING PROCESS

Acquired coping mechanisms are developed through strategies such as learning. The experience encountered throughout life contributes to customary responses to particular stimuli.

REGULATOR SUBSYSTEM

The maladaptive level of osteoarthritis pain alters the regulator subsystem. The regulator subsystem includes pain, stiffness, muscle weakness, swelling, joint deformity, limited ROM, local infection, disturbance in gait and sleep.

COGNATOR SUBSYSTEM

The maladaptive level of stress and osteoarthritis alters the cognator subsystem. The changes in the cognator subsystem can be noted in depression, anxiety, fear, feeling of helplessness, irritability etc.

After assessing the level of osteoarthritis pain in both experimental and control group by using the descriptive pain scale. Olive oil application intervention was carried out for the experimental group. Here the olive oil application intervention was used as the coping mechanism.

ADAPTATION LEVEL

A person's adaptation level is a constantly changing point, made up of focal, contextual and residual stimuli which represent the person's own standard of range of stimuli to which one can respond with ordinary adaptive responses.

ADAPTATION PROBLEMS

Adaptation problems are broad areas of concern related to adaptation. This describes the difficulties related to the indicators of positive adaptation.

ADAPTIVE MODES

- **PHYSIOLOGICAL MODE**

  The adaptive response in physical mode is the decreased pain, stiffness, muscle weakness, swelling, joint deformity, limited ROM, local infection, changes in sleep.

- **SELF- CONCEPT – GROUP IDENTITY MODE**

  The adaptive response in self concept mode is decreased depression, anxiety, fear, feeling of helplessness, irritability.

- **ROLE FUNCTION MODE**

  It refers to improved performance.

- **INTERDEPENDENCE MODE**

  The adaptive response in interdependent mode is to maintain social integrity.

OUTPUT

The intervention olive oil application may increase the coping pattern which reflects in the reduction of osteoarthritis pain and maintenance of good physiological and psychological status of patient with osteoarthritis in experimental group which is assessed by using descriptive pain scale thus showing adaptive response. The patients with osteoarthritis pain in control group showed maladaptive response.

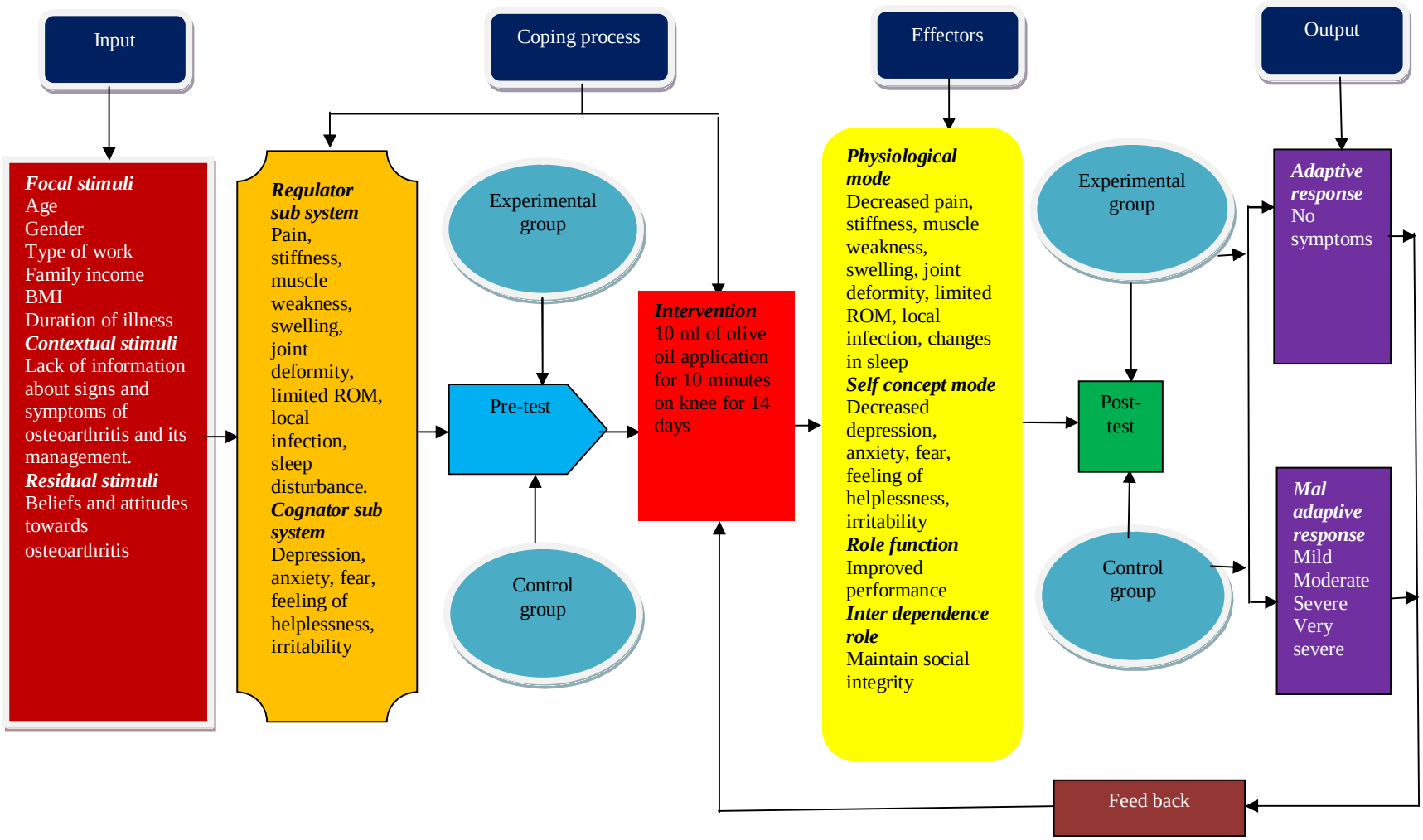


Figure-1 Modified Roy's Adaptation model - 1984

CHAPTER III

RESEARCH METHODOLOGY

This chapter deals with the methodology adopted by the investigator to assess the effectiveness of olive oil application among patients with osteoarthritis. It is the overall plan for answering the research questions or testing the research hypotheses.

RESEARCH APPROACH

An evaluatory approach was selected for this study.

RESEARCH DESIGN

True experimental pre-test and post-test control group design.

GROUPS	PRE-TEST	INTERVENTION	POST-TEST
Experimental group	O1	X	O2
Control group	O1	--	O2

R - Randomization.

O1 - pre-test assessment of pain.

X - Olive oil application 10ml for 10 minutes on the knee joint 1time a day.

O2 - post-test assessment of pain.

SETTING OF THE STUDY

Inpatients and outpatients of orthopedics department at The Salvation Army Catherine Booth Hospital, Nagercoil.

POPULATION

Patients with osteoarthritis.

TARGET POPULATION

Patients with osteoarthritis having pain in knee joint.

ACCESSIBLE POPULATION

Patients with osteoarthritis having pain in knee joint at the Salvation Army Catherine Booth Hospital, Nagercoil.

SAMPLE

Samples were patients with osteoarthritis who met the inclusion criteria.

SAMPLE SIZE

Sample size was 60; 30 patients for experimental group and 30 patients for control group.

SAMPLING TECHNIQUE

Simple random sampling technique was used to assign the subject.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

- ✓ Both male and female.
- ✓ Patients with osteoarthritis pain.

- ✓ Patients willing to participate.

EXCLUSION CRITERIA

- ➢ Patients not willing to participate.
- ➢ Patients who are having other type of arthritis.

VARIABLES

Dependent variable: Knee pain.

Independent variable: Olive oil application.

DESCRIPTION OF TOOL

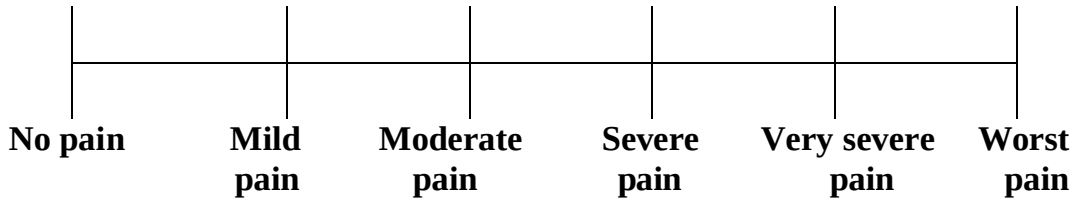
SECTION A

It consists of demographic variables like age, gender, type of work, family monthly income and duration of illness.

SECTION B

It consists of descriptive pain scale.

DESCRIPTIVE PAIN SCALE



SCORING PROCEDURE

SCORING

Score	Level of pain
0	No pain
1	Mild pain
2	Moderate pain
3	Severe pain
4	Very severe pain
5	Worst pain

CONTENT VALIDITY

The content validity of the tool was obtained from Consultant and 4 experts in the field of nursing.

PILOT STUDY

In order to test the feasibility relevance and practicability of the study pilot study was conducted from 11.06.2013 to 17.06.2013 among six samples with the permission of hospital authority. From those, three samples were taken as control group and three samples for experimental group in the same manner as that of the original study. Data analysis was done .The samples included in the pilot study was excluded in main study. Result showed that study was feasible.

DATA COLLECTION PROCEDURE

Data collection was done after getting permission from the hospital management. The objectives were informed. According to inclusion and

exclusion criteria simple random technique was used to select samples. For control group 30 samples were selected, pre and post assessment was done with descriptive pain scale. For experimental group 30 samples were selected before procedure, demographic variables collected and pain assessed with descriptive pain scale for affected knee and olive oil application done for 14 days. After 14 days post-test pain assessment was done with descriptive pain scale for both the groups.

PLAN FOR STATISTICAL ANALYSIS

It is planned to analysis and interprets data with the help of descriptive and inferential statistics.

DESCRIPTIVE ANALYSIS

Frequency percentage

To describe the demographic variables of patients with osteoarthritis.

Mean, Standard Deviation

To assess the pre-test and post-test pain score among patients with osteoarthritis.

INFERENTAL STATISTICS

Independent ‘t’ test

Used to compare the pain scores of post-test, to know effectiveness of olive oil application.

Paired ‘t’ test

Compare the pain scores of pre-test and post-test for paatients in the same group.

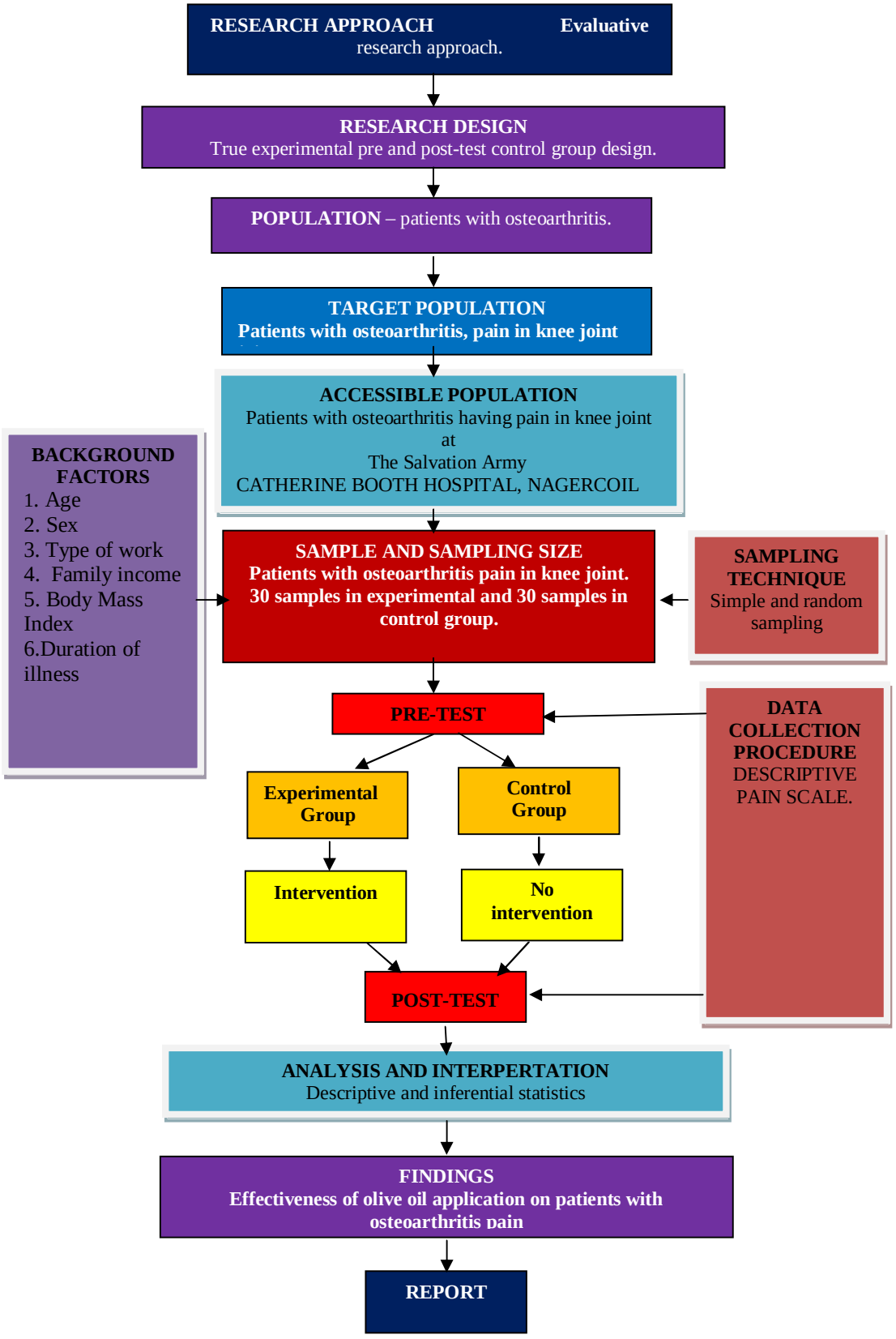
Chi-square test

To find the association between selected demographic variables and pain after olive oil application.

PROTECTION OF HUMAN RIGHTS

The dissertation committee approved the research proposal prior to the pilot study and the main study permission was obtained from the head of the department of the medical surgical nursing, Thanthai Roever College of Nursing and from hospital authority Assurance was given to the study subjects and confidentiality would be maintained.

SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY



CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data related to the effectiveness of olive oil application on knee pain among patients with osteoarthritis in selected hospital at Nagercoil.The data collected were grouped, tabulated, analyzed and organized based on the objectives of the study presented below.

Section I

Description of demographic variables of patients with osteoarthritis.

Section II

a) Pre-test and post-test level of pain among patients with osteoarthritis in the experimental group.

b) Pre-test and post-test level of pain among patients with osteoarthritis in the control group.

Section III

a) Comparison of mean and standard deviation of pre and post-test pain among patients with osteoarthritis in the experimental group.

b) Comparison of mean and standard deviation of pre and post-test pain among patients with osteoarthritis in the control group.

c) Comparison of mean and standard deviation of post-test pain among patients with osteoarthritis in experimental and control group.

Section IV

Association of post-test level of pain among patients with osteoarthritis in experimental group with their selected demographic variables.

Section I

Table-1 Frequency and percentage distribution of demographic variables of patients with osteoarthritis in experimental and control group

(N=60)

Sl. No	Demographic Variables	Experimental Group		Control Group	
		F	%	F	%
1	**Age in years**				
	<40	5	16.67	4	13.33
	41 - 50	8	26.67	7	23.33
	51 – 60	8	26.67	9	30.00
	>60	9	30.00	10	33.33
2	**Gender**				
	Male	16	53.33	13	43.33
	Female	14	46.67	17	56.67
3	**Type of work**				
	Mild work	11	36.67	13	43.33
	Moderate work	13	43.33	12	40.00
	Heavy work	6	20.00	5	16.67
4	**Family monthly income in Rs**				
	< 5,000	6	20.00	7	23.33
	5,001 - 10,000	16	53.33	16	53.33
	> 10,000	8	26.67	7	23.33
5	**Body Mass Index**				
	Under weight	3	10.00	4	13.33
	Normal weight	16	53.33	18	60.00
	Over weight	7	23.33	5	16.67
	Obesity	4	13.33	3	10.00
6	**Duration of illness in years**				
	< 1	3	10.00	4	13.33
	1 - 3	12	40.00	13	43.33
	3 - 5	8	26.67	9	30.00
	> 5	7	23.33	4	13.33

Table-1 shows that

- Majority of the participants 9 (30%) in experimental group and 10 (33.33%) in control group belong to 60-70 years of age group.

- Majority of subjects 16 (53.33%) in experimental group were male and 17 (56.67%) in control group were female.

- Majority of subjects 13 (43.33%) in experimental group were moderate workers and 13 (43.33%) in control group were mild workers.

- Majority in both group,16 (53.33%) were receiving Rs.5000-10,000/- as monthly family income.

- Majority 16 (53.33%) in experimental group and 13 (43.33%) in control group had normal bodyweight.

- Majority of subjects 12 (40%) in experimental group and 13 (43.33%) in control group were having illness for 1-3 yrs.

Figure: 2.1 Percentage distribution of age of the patients with osteoarthritis

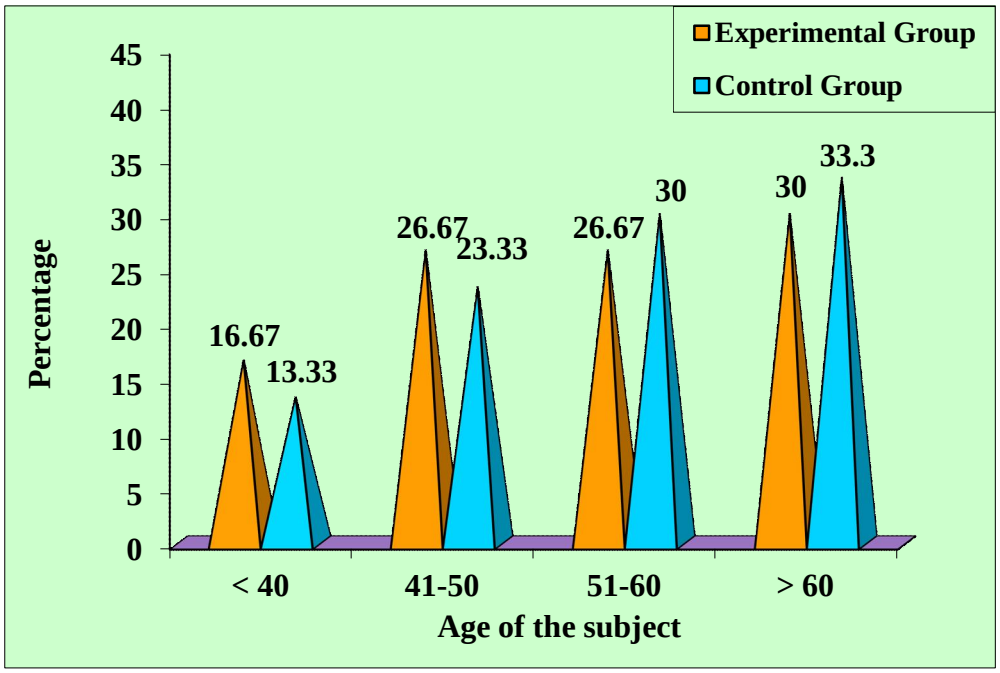


Figure: 2.2 Percentage distribution of gender of the patients with osteoarthritis

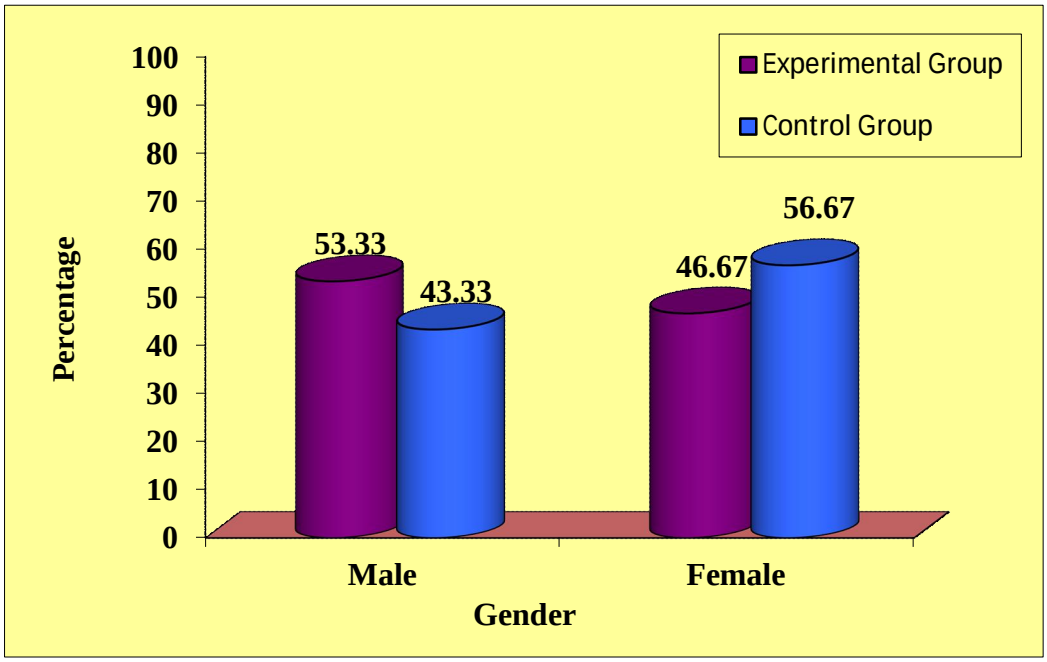


Figure 2.3 **Percentage distribution of type of work of the patients with osteoarthritis**

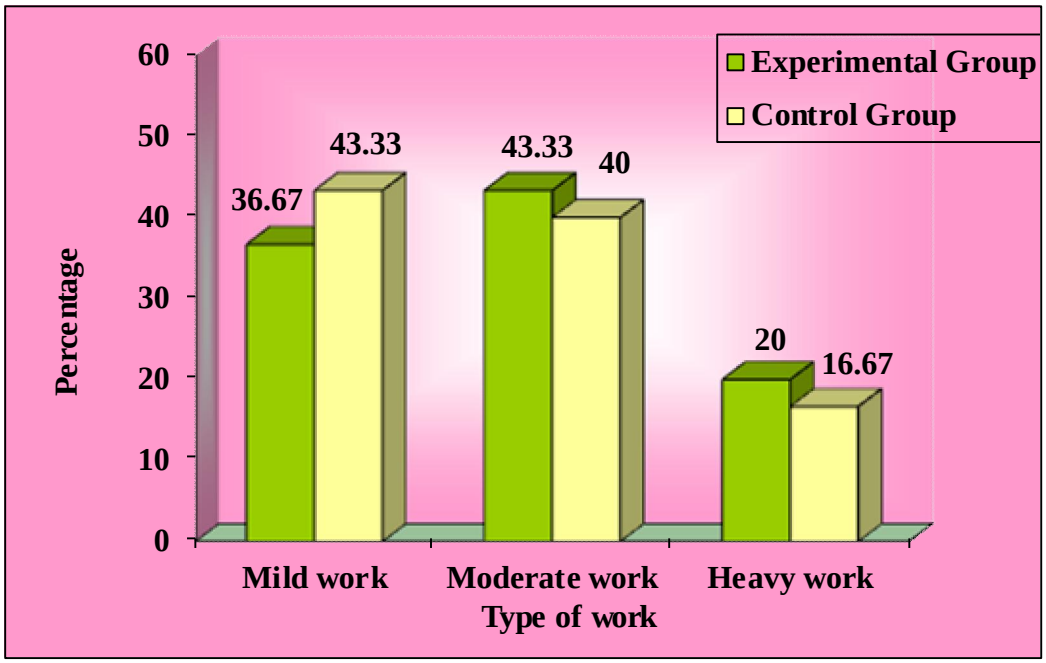


Figure 2.4 **Percentage distribution of family monthly income of the patients with osteoarthritis**

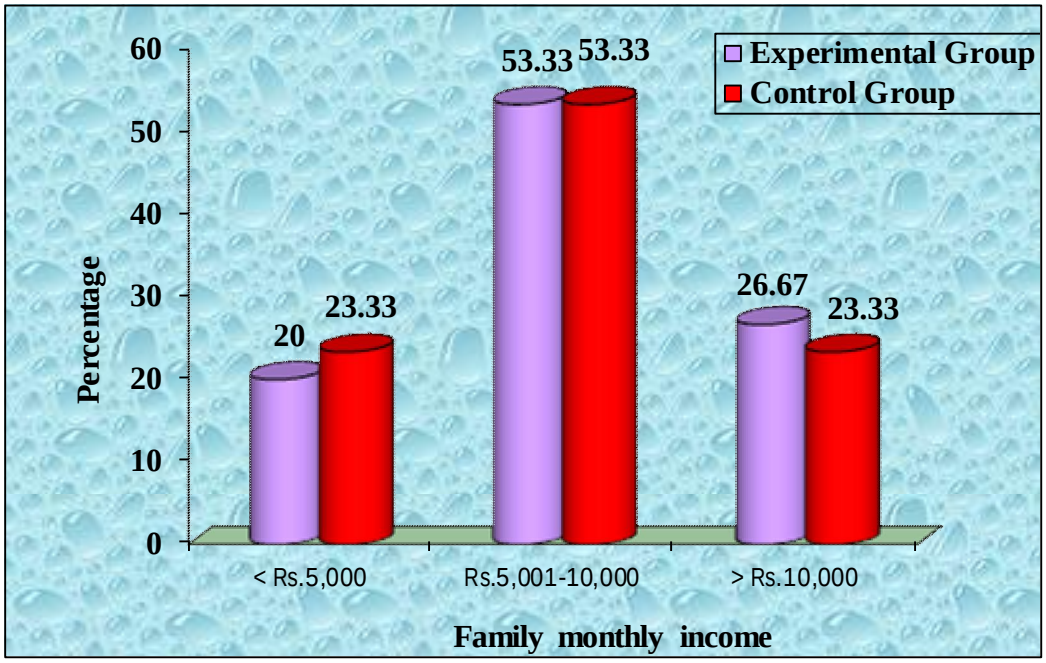


Figure 2.5 Percentage distribution of weight of the patients with osteoarthritis

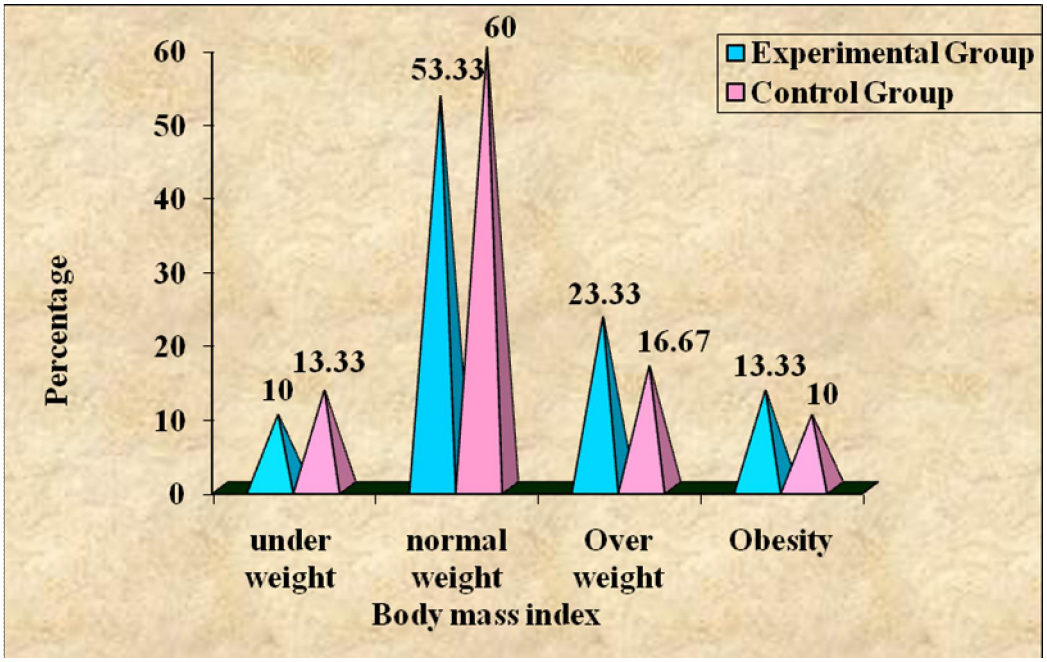
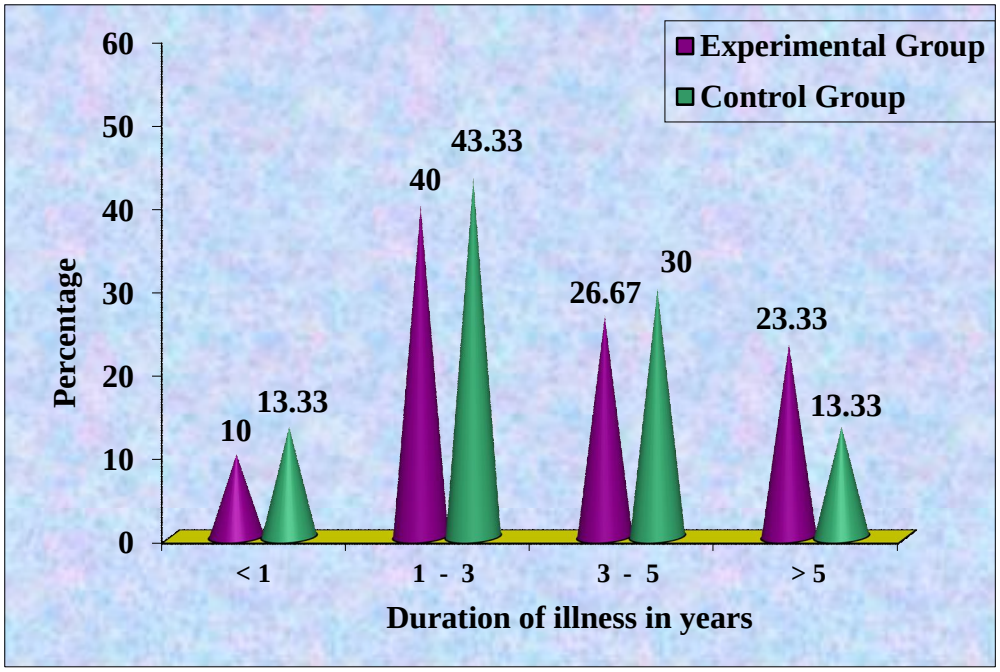


Figure 2.6 Percentage distribution of duration of illness of the patients with osteoarthritis



SECTION II

Table 2 Pre-test and post-test level of pain among patients with osteoarthritis in the experimental group

Pain	Pre-test		Post-test	
	No	**%**	**No**	**%**
No pain	0	0	0	0
Mild pain	0	0	18	60.0
Moderate pain	3	10	12	40
Severe pain	14	46.67	0	0
Very severe pain	13	43.33	0	0
Worst pain	0	0	0	0

Table 2 reveals that in pre-test 3(10.0%) had moderate pain, 14(46.67%) had severe pain, 13(43.33) had very severe pain. In post-test 18(60.0%) had mild pain, 12(40.0%) had moderate pain.

Figure 3 Percentage distribution of pre-test and post-test level of pain among patients with osteoarthritis in the experimental group

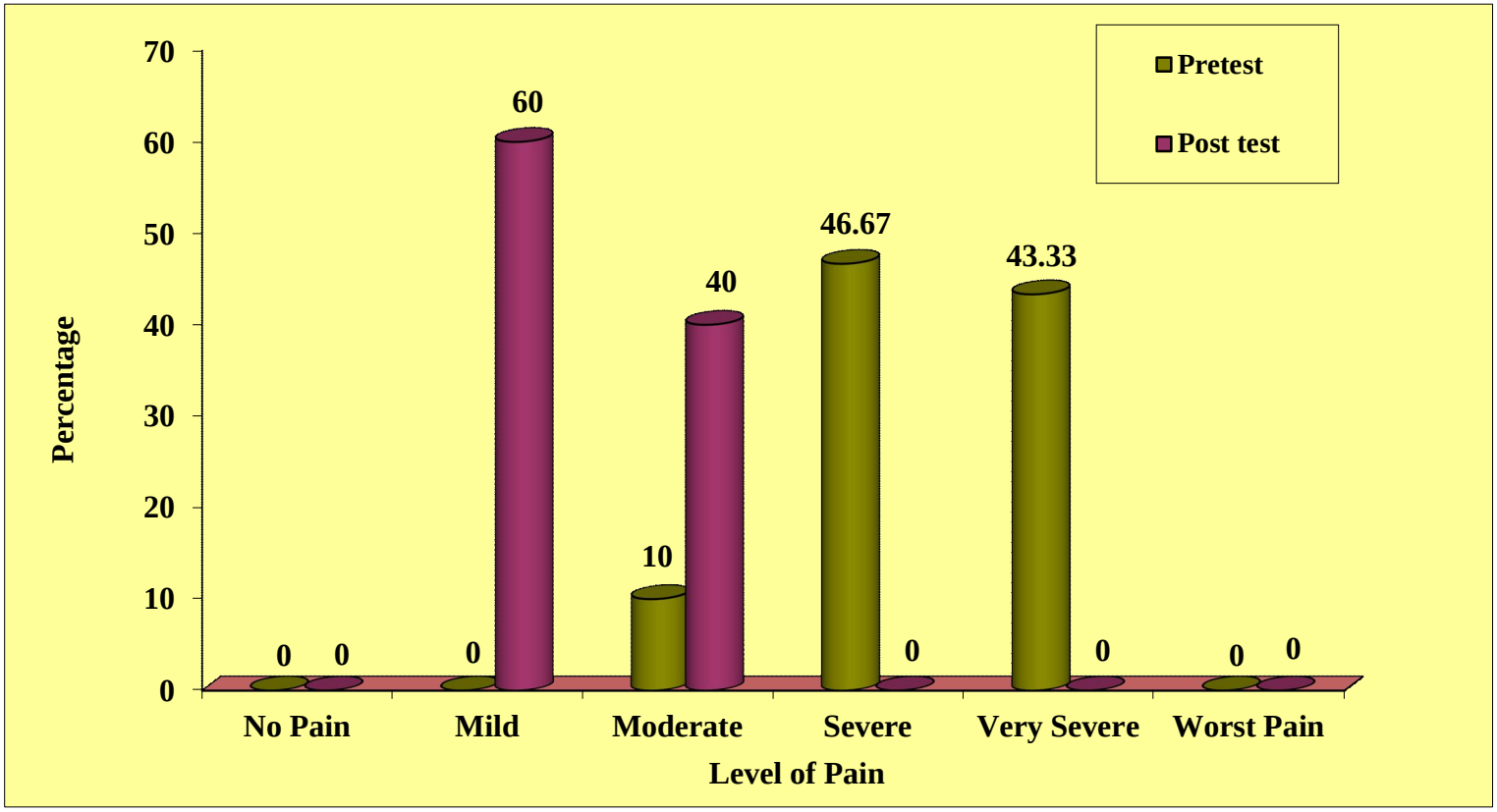
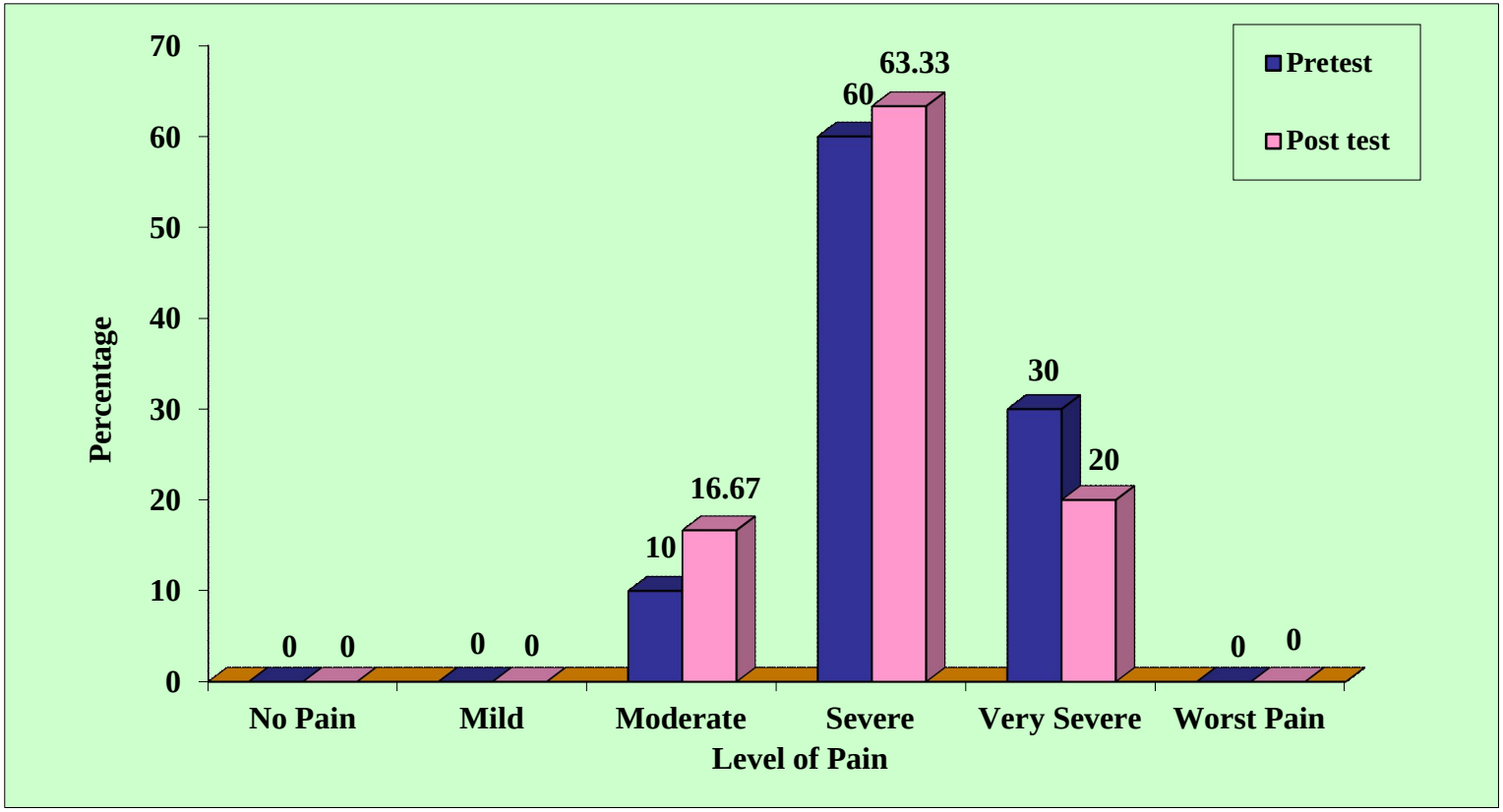


Table 3 Pre-test and post-test level of pain among patients with osteoarthritis in the control group

Pain	Pre-test		Post-test	
	No	**%**	**No**	**%**
No pain	0	0	0	0
Mild pain	0	0	0	0
Moderate pain	3	10	5	16.67
Severe pain	18	60	19	63.33
Very severe pain	9	30	6	20.0
Worst pain	0	0	0	0

Table 3 depicts that in pre-test 3(10.0%) had moderate pain, 18(60.0%) had severe pain, 9(30.0%) had very severe pain. In post-test 5(16.67%) had moderate pain, 19(63.33%) had severe pain, 6(20.0%) had very severe pain.

Figure 4 Percentage distribution of pre-test and post-test level of pain among patients with osteoarthritis in the control group



SECTION III

Table 4 Comparison of mean pain score and standard deviation of pre-test and post-test among patients with osteoarthritis in the experimental group

Test	Maximum score	Mean	Mean difference	S.D	't' test
Pre-test	5	3.33		0.66	t =15.314***
Post-test	5	1.40	1.93	0.49	p=S

***p<0.001, S – Significant

Table 4 delineates the calculated pre-test mean pain score was 3.33with standard deviation of 0.66 and the post-test mean pain score was 1.40with standard deviation of 0.49. The mean difference was 1.93 and the calculated't' value was 15.314 was a significant at p<0.001 level.

Figure 5 Comparison of pre-test and post-test mean pain score among patients with osteoarthritis in the experimental group

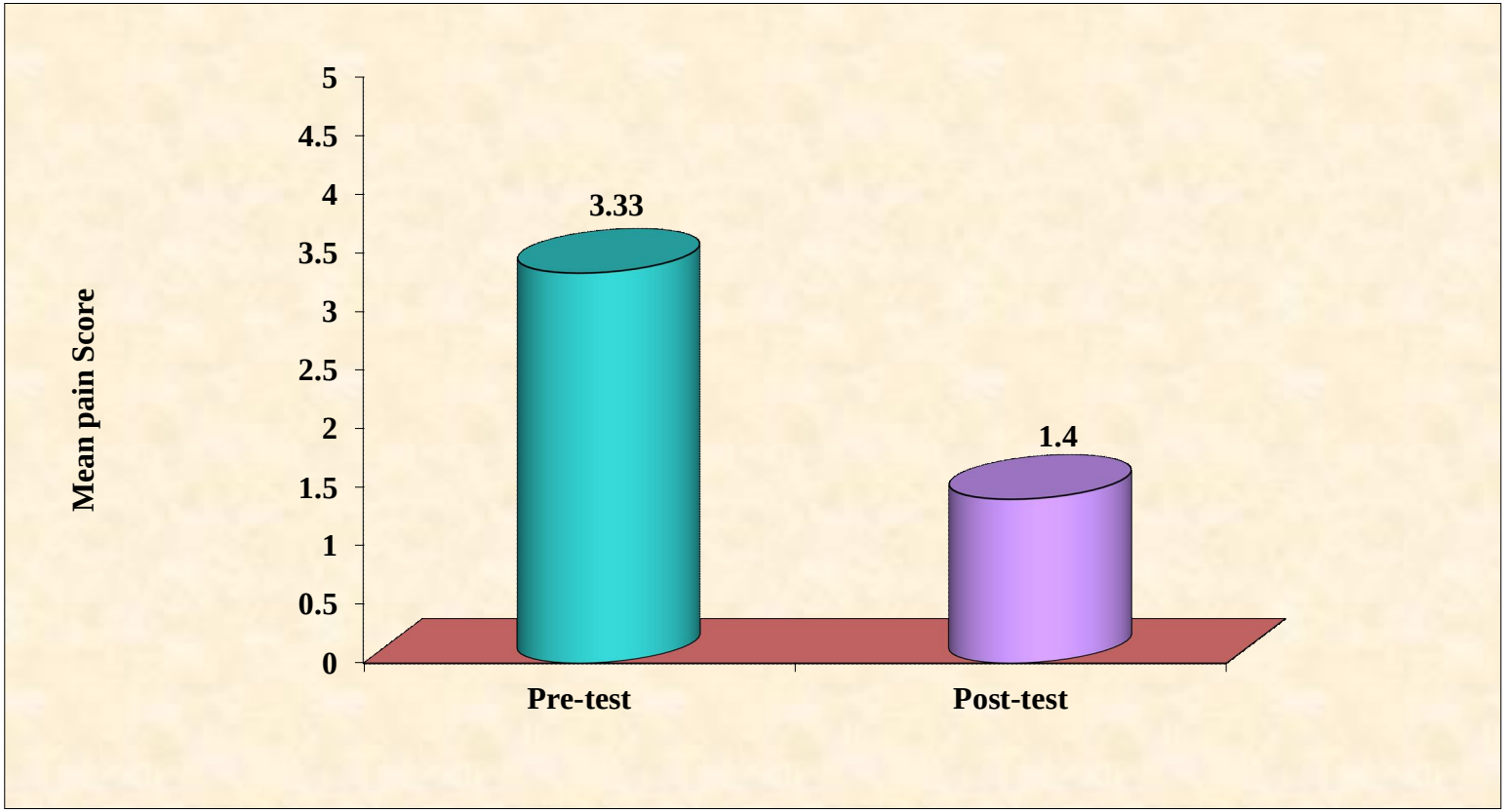


Table 5 Comparison of mean pain score and standard deviation of pre-test and post-test among patients with osteoarthritis in the control group

Test	Maximum score	Mean	Mean difference	S.D	't' test
Pre-test	5	3.20	0.17	0.61	t =1.980
Post-test	5	3.03		0.61	p =S

***p<0.001, S – Significant

Table 5 reveals that calculated pre-test mean pain score was 3.20 with standard deviation of 0.61and the post-test mean pain score was 3.03with standard deviation of 0.61. The mean difference was 0.17and the calculated't' value was 1.980 was significant at p<0.001 level.

Figure 6 Comparison of pre-test and post-test mean pain score among patients with osteoarthritis in the control group

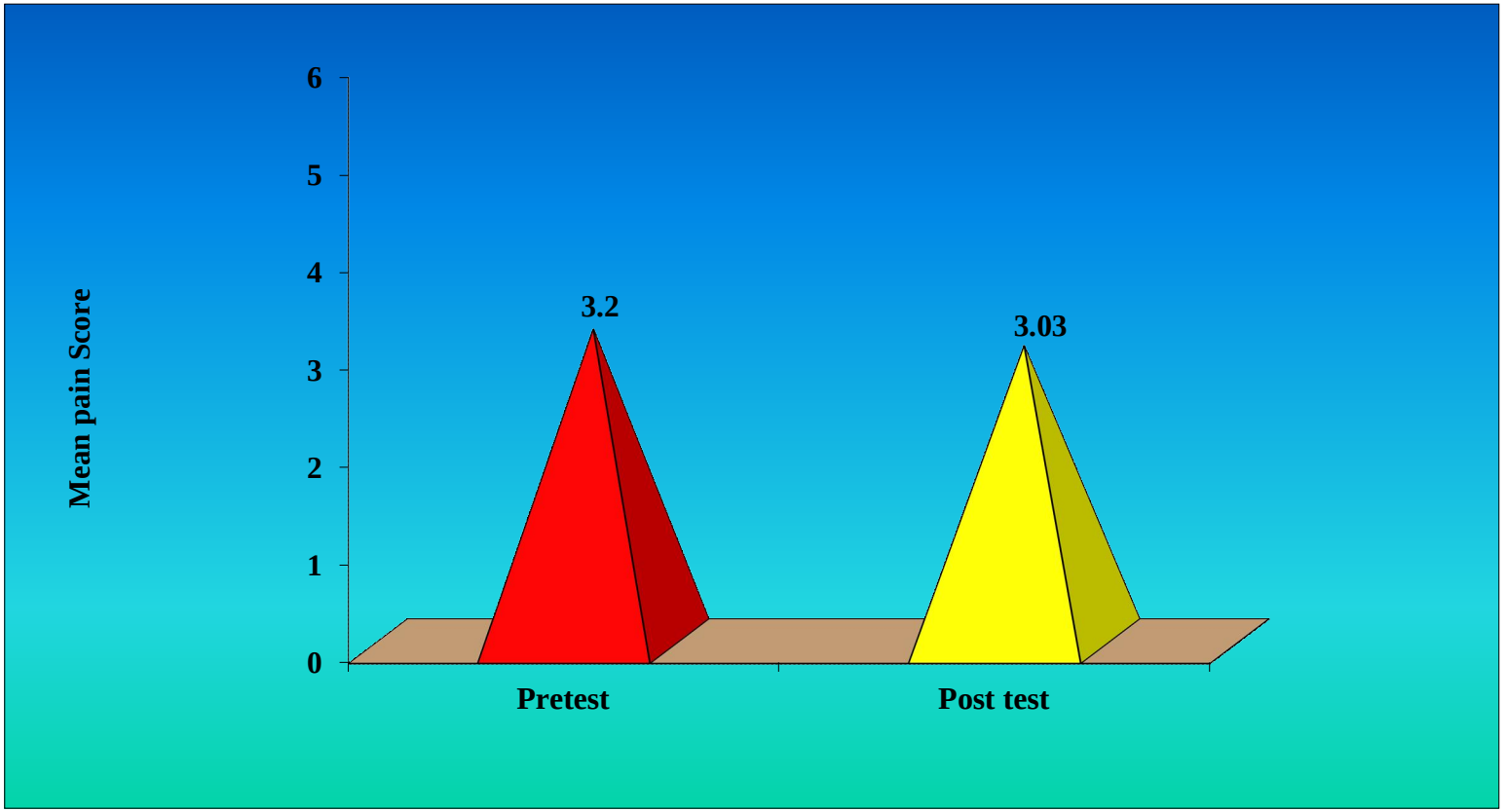


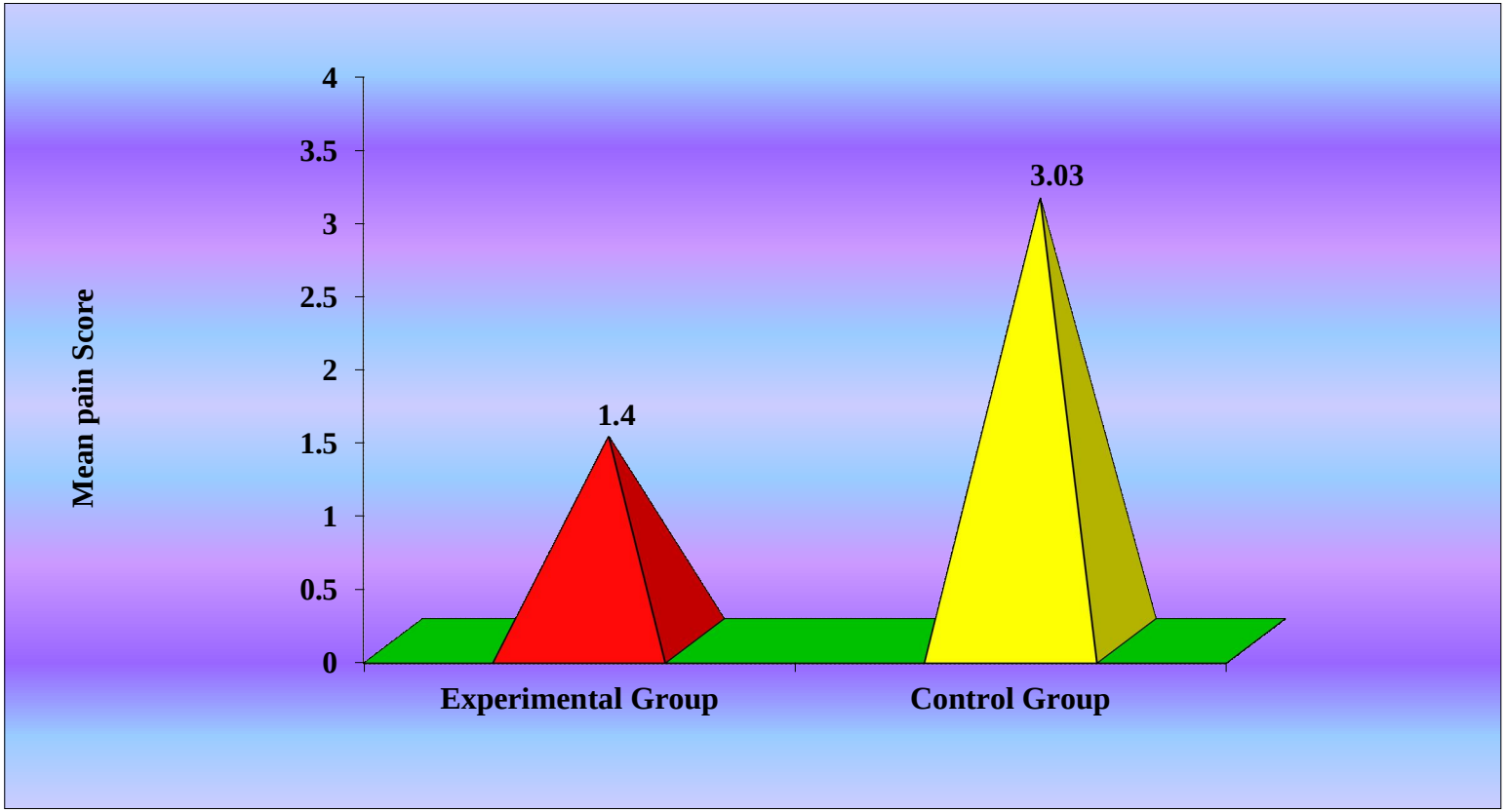
Table 6 Comparison of mean pain score and standard deviation in the post-test among patients with osteoarthritis in experimental and control group

Group	Maximum score	Mean	Mean difference	S.D	't' test
Experimental	5	1.40	1.63	0.49	t =11.303***
Control	5	3.03		0.61	P=S

***p<0.001, S – Significant

Table 6 illustrates that calculated experimental group post-test mean pain score was 1.40 with standard deviation of 0.49and the control group post-test mean pain score was 3.03with standard deviation of 0.61. The mean difference was 1.63 and the calculated't' value was 11.303 was significant at p<0.001 level.

Figure 7 Comparison of post-test mean pain score among patients with osteoarthritis in the experimental and control group



SECTION IV

Table 7 Association of post-test mean pain score among patients with osteoarthritis in experimental group with their selected demographic variables

Sl. No	Demographic Variables	Mild	Moderate	Chi-Square value
		No.	No.	
1	**Age in years**			
	< 40	3	2	
	41 – 50	5	3	
	51 – 60	2	6	χ^2 = 7.234 N.S
	> 60	8	1	
2	**Gender**			
	Male	9	7	χ^2 = 0.201 N.S
	Female	9	5	
3	**Type of work**			
	Mild work	8	3	
	Moderate work	7	6	χ^2 = 1.198 N.S
	Heavy work	3	3	
4	**Family monthly income in Rs**			
	< 5,000	3	3	
	5,001 - 10,000	9	7	χ^2 = 1.094 N.S
	> 10,000	6	2	
5	**Body Mass Index**			
	Under weight	3	4	
	Moderate weight	16	18	
	Under weight	7	5	χ^2 = 16.13 N.S
	Obesity	4	3	
6	**Duration of illness in years**			
	< 1	3	4	χ^2 = 3.686 N.S
	1 - 3	12	13	
	3 - 5	8	9	
	> 5	7	4	

N.S – Not Significant

Table 7 There was no significant association found between the demographic variables of age, gender, body mass index ,type of work ,family income, duration of illness among patients with osteoarthritis in experimental group at $p<0.001$ level.

CHAPTER V

DISCUSSION

This chapter highlights the discussion of the data analyzed based on the objectives and hypotheses of the study. The problem stated is, “An experimental study to assess the effectiveness of olive oil application on knee pain among patients with osteoarthritis in selected hospital at Nagercoil.” The discussion is based on the objectives and the hypotheses specified in the study.

The first objective of the study was to assess the level of knee pain among patients with osteoarthritis

In experimental group, pre-test assessment of pain revealed that 3(10.0%) had moderate pain, 14(46.67%) had severe pain, 13(43.33) had very severe pain and in post-test 18(60.0%) had mild pain, 12(40.0%) had moderate pain. In control group, in pre -test 3(10.0%) had moderate pain, 18(60.0%) had severe pain, 9(30.0%) had very severe pain and in post-test 5(16.67%) had moderate pain, 19(63.33%) had severe pain, 6(20.0%) had very severe pain.

The second objective of the study was to assess the effectiveness of olive oil application on knee pain among patients with osteoarthritis

In experimental group post-test mean pain score was 1.40 with standard deviation of 0.49and in the control group post-test mean pain score was 3.03with standard deviation of 0.61. The difference was 1.63 and the calculated‘t’ value was 11.303 significant at $p<0.001$ level. Based on the study findings the stated hypothesis H_1 there will be a significant reduction of

knee pain among patients with osteoarthritis after olive oil application was accepted

The third objective of the study was to find out the association of post-test level of pain among patients with osteoarthritis with their selected demographic variables in the experimental group

There was no significant association found between age, gender, body mass index, type of work, family income, duration of illness with their demographic variables at $p<0.001$ level. Hence the hypothesis H_2 there will be significant association between post-level of knee pain and selected demographic variables of patients with osteoarthritis who received olive oil application was not accepted

CHAPTER VI

SUMMARY, MAJOR FINDINGS, IMPLICATIONS, RECOMMENDATIONS AND CONCLUSION

This chapter is divided into two sections in the first section summary of the study, findings and conclusion is presented. In the second section implication in various areas of nursing practice, nursing education, nursing administration, nursing research and recommendations for further study are present.

SUMMARY OF THE STUDY

The objective of the study were to evaluate the effectiveness of olive oil on pain among patient with osteoarthritis between experimental and control group and to find out the association between post-test mean pain score in an experimental group and selected demographic variable .The olive oil application will reduce knee pain.

The research approach adopted for this study was evaluative in nature. The present study was true experimental study, pre-test, post-test, control group design. Independent variable of the study was olive oil application and dependent variable was knee pain. The conceptual framework adopted for the present study was based on Roy's adaptation model. The tool used in this study was descriptive pain scale. The content validity of the tool was established by four experts. Pilot study was conducted in The Salvation Army Catherine Booth Hospital Nagercoil with a number of 6 samples and the study was found to be feasible. The main study was conducted in same hospital. The samples included in the pilot study were excluded in main study. 60 samples were recruited through simple random sampling technique. Written consent was obtained; pre-test was done to assess the knee pain.

Olive oil application was done once for 14 days for experimental group and no intervention was given for control group. Post-test was done at the end of 14th day. Findings revealed that experimental group post-test mean pain score was 1.40 with standard deviation of 0.49and the control group post-test mean pain score was 3.03with standard deviation of 0.61. The mean difference was 1.63 and the calculated't' value was 11.303 significant at $p<0.001$ level. Patients in experimental group experienced less pain compared to pain of control group. There was no significant association between post-test mean pain score and demographic variables

Major findings of the study

- Majority of the participants 30% in experimental group and 33.33% in control group belongs to 60-70 years of age group.
- Majority of subjects 53.33% in experimental group were male and 56.67% in control group were female.
- Majority of subjects 43.33% in experimental group were moderate workers and 43.33% in control group were mild workers.
- Majority in both group, 53.33% were receiving Rs.5001-10,000/-
- Majority 53.33% in experimental group and 43.33% in control group had normal weight.
- Majority of subjects 40% in experimental group and 43.33% in control group were having illness for 1-3 yrs.

Findings related to study intervention

1. In pre-test experimental group, 46.67% and in control group 60.0% had severe pain.

2. In post-test experimental group, 60% had mild pain and 63.33 in control group had severe pain.

3. In experimental group the pre-test mean pain score was 3.33 and post- test mean was 1.40 the calculated‘t’ value was 15.314 significant at $p<0.001$ level.

4. In control group, pre-test mean pain score was 3.30 and the post-test mean pain score was 3.03 and the calculated ‘t’ value was 1.980 was significant at $p<0.001$ level.

5. In post-test, the mean pain score was 1.40 in experimental group was less than control group post-test mean pain score 3.03. And the calculated‘t’ value was 11.303 significant at $p<0.001$ level.

6. There is association of post-test mean pain score was not significant with age, gender, body mass index, type of work, family income and duration of illness.

IMPLICATIONS

The following implications, which are of vital concern in the field of nursing practice, nursing education, nursing administration and nursing research is derived from the study.

Implications for Nursing Practice

The Nurses have a vital role in providing safe and effective nursing care to enhance the reduction of pain among patient with osteoarthritis.

This can be facilitated by motivating the nurse to,

1. Have an in depth knowledge on osteoarthritis and management for osteoarthritis
2. Learn about accurate assessment of pain with the use of descriptive pain scale.
3. Develop the skill in providing efficient nursing care for effective pain management and promote comfort.
4. The study result helps the nursing personnel to include olive oil application as a nursing intervention in the management of knee pain among patients with osteoarthritis.

Implications for Nursing Education

1. Provide adequate clinical exposure for the students to give effective and safe nursing care for patients with osteoarthritis in pain reduction.
2. The effect of olive oil application in reduction of knee pain for osteoarthritis is to be published in the nursing journals to make awareness among the nursing students.

Implications for Nursing Administration

1. Conduct in-service programme and continuing nursing education programme for nurses for effective management of knee pain among patients with osteoarthritis.

2. The nurse educator can make awareness among staff nurses about significance of olive oil application for reducing knee pain among patients with osteoarthritis through workshops and seminars**.**

Implications for Nursing Research

1. As a nurse researcher, promote more research on effective management for knee pain in patients with osteoarthritis

2. The nurse researcher can do this study with large population to generalize the findings.

RECOMMENDATIONS

The study recommends the following future research,

- The similar study can be conducted with larger samples for better generalization.
- This study can be conducted as a longitudinal study.
- A follow up study can be conducted to find out whether the patients with osteoarthritis are practicing application of olive oil to reduce knee pain.

CONCLUSION

The purpose of the study was to assess the effectiveness of olive oil on pain among patients with osteoarthritis. From the findings it is proved that olive oil application found to be effective in experimental group than control group, who had no intervention.

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ANNEXURE I

LETTER SEEKING EXPERT OPINION FOR

CONTENT VALIDITY

From:

301211704,
II year M.Sc. Nursing
ThanthaiRoever College of Nursing
Perambalur.

To:

Respected Sir/madam,

Sub: Requisition for content validity of tool.

I am doing M.Sc. Nursing II Year in ThanthaiRoever College of Nursing, Perambalur, under The Tamil Nadu, Dr.M.G.R. Medical University Chennai. As a partial fulfillment of my M.Sc. Nursing Degree Programme, I am conducting a research on **AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF OLIVE OIL APPLICATION ON KNEE PAIN AMONG PATIENTS WITH OSTEOARTHRITIS IN SELECTED HOSPITAL AT NAGERCOIL.**I am sending the content of the above stated for your expert and valuable opinion, I will be thankful for your kind consideration. Kindly return it to the undersigned.

Thanking you

Place: Yours sincerely,

Date: **301211704**

ANNEXURE II

LIST OF EXPERT'S OPINION FOR

CONTENT VALIDITY

1. **Dr.Illamchelian. M.S(ORTHO)**
   Ortho Consultant,
   The Salvation Army Catherine Booth Hospital
   Nagercoil.

2. **Prof. R. Punithavathi. M.Sc. (N)**
   Principal ,
   ThanthaiRoever College of Nursing,
   Perambalur.

3. **Prof.V.J. Elizabeth.M.Sc. (N)**
   Vice-Principal,
   ThanthaiRoever College of Nursing,
   Perambalur.

4. **Dr.RajinaRani M.Sc. (N), Ph.D**
   Principal.
   Doctor's College of Nursing,
   Pudhukottai.

5. **Prof. Jasmine Parimala. M.Sc.(N)**
   Principal,
   C.S.I Eliza Caldwell College of Nursing
   Thesiyanvilai.

6. **Prof.Angel PriyaM.Sc.(N)**
   Principal,
   The Salvation Army Catherine Booth College of Nursing
   Nagercoil.

ANNEXURE III

EVALUATION CRITERIA CHECK LIST FOR VALIDATION

INTRODUCTION

The expert is requested to go through the following criteria for evaluation. Three columns are given for response and a column for the remark. Place tick mark in the appropriate column and given remarks.

INTERPRETATION OF COLUMN:

Column I : Meets the criteria.

Column II : Partially meets the criteria.

Column : Does not meet the criteria.

Sl. No	Criteria	1	2	3	Remarks
1	Scoring - Adequacy - Clarity - Simplicity				
2	Content - Logical sequence - Adequacy - Relevance				
3	Language - appropriate - clarity - simplicity				
4	Practicability - It is easy to score - Does it precisely - Utility				

Signature :

Name :

Designation :

Address :

Any other suggestion

ANNEXURE IV

PERMISSION LETTER FOR RESEARCH PURPOSE

From

301211704
II year M.Sc. Nursing
ThanthaiRoever College of Nursing,
Perambalur.

Through

The Principal
ThanthaiRoever College of Nursing,
Perambalur.

To

The Administrator,
The Salvation Army Catherine Booth hospital,
Nagercoil

Respected Madam / Sir,

I am doingII Year M.Sc. Nursing in ThanthaiRoever College of Nursing Perambalur, under the Tamilnadu Dr. M.G.R. Medical University Chennai. As a partial fulfillment of my M.Sc.(Nursing) Degree Programme, I am going to conduct a study "**AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF OLIVE OIL APPLICATION ON KNEE PAIN AMONG PATIENTS WITH OSTEOARTHRITIS IN SELECTED HOSPITAL AT NAGERCOIL.**I would like to select your for my Data collection, as I understand that I may get many patients with osteoarthritis in your hospital. Hence I kindly request you to grant me permission to conduct my study in your hospital.

Thanking you

Place: Yours sincerely,

Date: (301211704)

ANNEXURE V (A)

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work**AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF OLIVE OIL APPLICATION ON KNEE PAIN AMONG PATIENTS WITH OSTEOARTHRITIS IN SELECTED HOSPITAL AT NAGERCOIL**done by 301211704 II year M.Sc. Nursing, in ThanthaiRoever college of Nursing, Perambalur is edited for English language appropriateness.

Signature

ANNEXURE V(B)

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work **AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF OLIVE OIL APPLICATION ON KNEE PAIN AMONG PATIENTS WITH OSTEOARTHRITIS IN SELECTED HOSPITAL AT NAGERCOIL**done by301211704 II year M.sc. Nursing, in ThanthaiRoever College of Nursing , Perambalur is edited for Tamil language appropriateness .

Signature

ANNEXURE VI

ஒப்புதல்படிவம்

தந்தைரோவர்செவிலியர்கல்லூரியில்பயிலும்301211704அவர்களால்நடத்தப்படுகின்றஆராய்ச்சிநோக்கத்தினைப்பற்றிஎனக்குதெளிவாகதெரிவிக்கப்பட்டது.இதில்பங்கேற்பதற்குஎனக்குஎந்தஆட்சேபனையும்இல்லை.மேலும்இந்தவிவரங்களைவெளியிடுவதற்கும்,அச்சிடுவதற்கும்முழுசம்மதம்அளிக்கிறேன்.

கையெழுத்து:

பெயர் :

தேதி :

இடம்:

ANNEXURE VII (A)

Data Collection Tool Part (1)

Demographic Data: Mark (√) the appropriate options in the given boxes

1) Age in years
- a) <40 [ ]
- b) 41 - 50 [ ]
- c) 51 - 60 [ ]
- d) > 60 [ ]

2) Gender
- a) Male [ ]
- b) Female [ ]

3) Type of work
- a) Mild work [ ]
- b) Moderate work [ ]
- c) Heavy work [ ]

4) Family monthly income in Rs
- a) <5,000 [ ]
- b) 5,001 - 10,000 [ ]
- c) >10,000 [ ]

5) Body Mass Index
- a) Under weight [ ]
- b) Moderate weight [ ]
- c) Over weight [ ]
- d) Obesity [ ]

6) Duration of illness in years
- a) <1 [ ]
- b) 1 – 3 [ ]
- c) 3 - 5 [ ]
- d) >5 [ ]

ANNEXURE VII(B)

Gs;sp tp tug; gl;bay

rhkgp y; v z

rhpahd tpiliaFwpggpl bf gz z Tk(✓)

1. gqFnfhz lthpd taJ tUlqfspy

   a) <40 ☐ b) 41-50 ☐

   c)51-60 ☐ d)>60 ☐

2. ghypdk

   a) M z ☐ b)ngz ☐

3. cly cioggpd tif

   a), yF thdNt iy ☐ b)kpjkhdNt iy ☐

   c)fbdkhdNt iy ☐

4. FLkgkhj tUkhdk

   a)<5,000 ☐ b)5,001-10,000 ☐

   c)>10,000 ☐

5. vil

   a)F iwthdvil ☐ b)kpjkhdvil ☐

   c)mjpfvil ☐ d)cly gUkd ☐

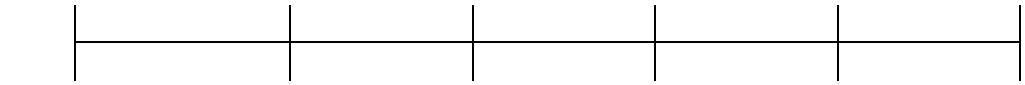
6. Nehapd fhymsTtUlqfspy

   a) <1 ☐ b)1-3 ☐

   c)3-5 ☐ d)>5 ☐

ANNEXURE VIII (A)

DESCRIPTIVE PAIN SCALE



No pain Mild Pain pain pain Moderate pain pain Severe Very severe Worst

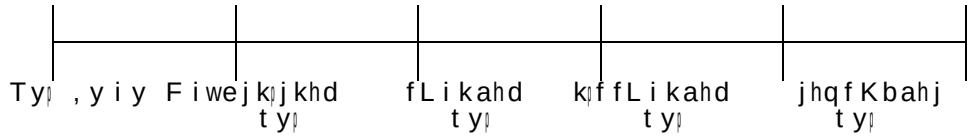
SCORING PROCEDURE

SCORING

Score	Level of pain
0	No pain
1	Mild pain
2	Moderate pain
3	Severe pain
4	Very severe pain
5	Worst pain

ANNEXURE VIII (B)

tpthpf;fgl;l typmsTNfhy



typmsTkjpngd

typmsT	kjpngd;
typ ,yiy	0
Fiwej typ	1
kpjkhd typ	2
fLikahd typ	3
kpffLikahd typ	4
jhqfKbahj typ	5